• **Pons**
  — partly made up of tracts that connect the spinal cord with higher brain levels, and it also contains cell groups that transfer information from the cerebrum to the cerebellum
  — serves as a message station between several areas of the brain
  — sleep and dreaming
  — secretion of saliva and tears

• **cerebellum**
  — coordinates voluntary movements such as posture, balance, coordination, and speech, motor activity
  — learning motor behaviors.
  — Orchestrates muscular activities to synchronisation
  — Damage results in poor, jerky uncoordinated movements

• **Brain stem**
  — Regulates basic bodily processes
  — Just above spinal cord
  — Reticular formation
    - 2 structures (medulla, pons) - contain a central core- reticular activating system (sleep and arousal)
    - a set of interconnected nuclei that are located throughout the brain stem
    - Its dorsal tegmental nuclei are in the midbrain while its central tegmental nuclei are in the pons and its central and inferior nuclei are found in the medulla
    - The reticular formation has two components
      1. The ascending reticular formation is also called the reticular activating system. It is responsible for the sleep-wake cycle, thus mediating various areas of alertness
      2. The descending reticular formation is involved in posture and equilibrium as well as autonomic nervous system activity. It receives information from the hypothalamus. The descending reticular formation also plays a role in motor movement.
  — Regulation of motor activities

• **Midbrain**
  - serves important functions in motor movement, particularly movements of the eye, and in auditory and visual processing
  - Contains an extension of RAS- also contains a portion of the reticular formation, a neural network that is involved in arousal and alertness
  - Superior colliculi (vision)
  - Inferior colliculi (hearing)

• **Forebrain**
  - **Thalamus**
    - Above hypothalamus
    - Close to the centre of the brain
    - Consists of 2 football shaped parts, 1 in each hemisphere
    - Relay station of the brain
    - Receives input from all senses and transmits info to other parts
  - **Hypothalamus**
    — Regulates autonomic nervous system
    — Sweating, salivating, tears, changes in blood pressure
    — Homeostasis